APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,515	10/26/2001	Hung T. Nguyen	01-627	3993

24319   7590   05/26/2004

LSI LOGIC CORPORATION
1621 BARBER LANE
MS: D-106 LEGAL
MILPITAS, CA 95035

EXAMINER
KIM, KENNETH S

ART UNIT	PAPER NUMBER
2111	

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

KENNETH S. KIM
PRIMARY EXAMINER

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

1.   Claims 1-23 are presented for examination.

2.   The abstract of the disclosure is objected to because the current abstract does

not reflect the inventive feature of the claimed invention to distinguish over the prior art.

Correction is required. See MPEP § 608.01(b).

All amended abstracts are to be submitted on a **separate sheet** (without the

brackets and underlines) in addition to a mark-up copy.

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Van

Dyke et al, U.S. Patent No. 6,578,134.

Van Dyke et al teaches the invention as claimed in claim 1 including a

mechanism for use in a wide issue pipelined processor for reducing pipeline stalls

between conditional branches comprising:

(a) a mis-predict program counter (PC) generator that generates a mis-predict PC value for each conditional branch instruction in a pipeline of said processor (APC; col. 8, line 59),

(b) mis-predict PC storage (x_APC) coupled to said mis-predict PC generator stores said mis-predict PC value until a resolution of said conditional branch and makes said mis-predict PC value available to a PC of said processor if said resolution results in a mis-predict condition (col. 9, line 20), and

further teaches as in claims 2-8,

(c) wherein said mis-predict generator is associated with a static branch predictor (col. 2, line 23) – claim 2,

(d) wherein said mis-predict PC generator generates a branch prediction and said mis-predict PC value in a single clock cycle (col. 8, line 55) – claim 3,

(e) wherein said branch prediction is employed to pr-fetch instructions (col. 2, line 10) – claim 4,

(f) wherein a mis-predict PC register queue has as many slots as the pipeline stages and said mis-predict PC values moves through the registers as said conditional branch moves along the pipeline stages (fig. 3) – claims 5 and 6,

(g) wherein said resolution occurs in an execution stage of said pipeline in a digital signal processor (col. 1, line 61) – claims 7 and 8.

The method claims 9-16 and the system claims 17-23 are equivalently rejected based on the same reason.

5.   Claims 1-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar
et al, U.S. Patent No. 5,933,850.

Kumar et al teaches the invention as claimed in claim 1 including a mechanism
for use in a wide issue pipelined processor for reducing pipeline stalls between
conditional branches comprising:

(a) a mis-predict program counter (PC) generator that generates a mis-predict PC value
for each conditional branch instruction in a pipeline of said processor (col. 6, lines 52-
59),

(b) mis-predict PC storage (52; APC/x) coupled to said mis-predict PC generator stores
said mis-predict PC value until a resolution of said conditional branch and makes said
mis-predict PC value available to a PC of said processor if said resolution results in a
mis-predict condition (col. 6, line 29), and

further teaches as in claims 2-8,

(c) wherein said mis-predict generator is associated with a static branch predictor (col.
6, line 25) – claim 2,

(d) wherein said mis-predict PC generator generates a branch prediction and said mis-
predict PC value in a single clock cycle (col. 6, line 58; signals 40, 42, and P are
available at the same time) – claim 3,

(e) wherein said branch prediction is employed to pre-fetch instructions (the purpose of
prediction is to pre-fetch) – claim 4,

(f) wherein a mis-predict PC register queue has as many slots as the pipeline stages and said mis-predict PC values moves through the registers as said conditional branch moves along the pipeline stages (fig. 5; col. 6, line 54) – claims 5 and 6,

(g) wherein said resolution occurs in an execution stage of said pipeline in a digital signal processor (resolved at E, execution stage) – claims 7 and 8.

The method claims 9-16 and the system claims 17-23 are equivalently rejected based on the same reason.

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hoyt et al taught a method of providing mis-predict PC value stored in a pointer table.

Kacevas taught a method of recovering from mis-predict using an alternate pipeline memory storing processing result of the alternate path instructions.

Levitan et al taught a method of providing mis-predict PC values stored in a branch queue.

Zaidi et al taught a method of providing mis-predict PC values in a FIFO buffer branch resolution table.

Lucas et al taught a method of providing mis-predict PC value stored in an alternate address register.

7   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth S KIM whose telephone number is (703) 305-9693. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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May 21, 2004

KENNETH S. KIM
PRIMARY EXAMINER